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ABSTRACT

The literature on teacher education is vast. This review, though not complete, examines what is known about the context, goals, and results of teacher education. The document aims to be a summary of research literature rather than a methodological critique. The context is taken to include the academic and political environments, the individuals involved in teacher education programs, and projections of teacher supply and demand. Both discrete and holistic goals are considered. The literature on the outcomes of teacher education is considered in terms of program, context, and goals. Whenever possible, Canadian publications are included among the 129 references cited. (Author/LL)

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TEACHER EDUCATION

A REVIEW OF THE LITERATURE

1980 - 1989

A REPORT COMPILED FOR THE

NEW BRUNSWICK SCHOOL RESEARCH CONSORTIUM

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University of New Brunswick

Education Resource Centre

Fredericton, N.B.

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TABLE OF CONTENTS

	Page
PREFACE	1
THE CONTEXT OF TEACHER EDUCATION	5
1. Academic Milieu	5
2. The Political Environment	13
3. Teacher Education Faculty	20
4. Teacher Education Students	24
5. The Demand for Graduates of Teacher Education Programs	32
THE GOALS OF TEACHER EDUCATION	36
1. Overview	36
2. Discrete Goals	38
3. Reflection as a Goal	44
THE RESULTS OF TEACHER EDUCATION	50
EPILOGUE	57
REFERENCES	59

ABSTRACT

This review examines the research literature on the context, goals and results of teacher education. The context is taken to include the academic and political environments, the individuals involved in teacher education programs and projections of teacher supply and demand. Both discrete and holistic goals are considered. The literature on the outcomes of teacher education is considered in terms of program context and goals. Whenever possible, Canadian publications are included among the 129 references cited.

PREFACE

The literature of teacher education is vast. Citations to more than 5,700 periodical articles and reports from the 1980's can be retrieved from the ERIC database by using the descriptor "teacher education." A thorough review of the literature in English, including monographs and dissertations, would require the examination of at least 7,000 documents. The present compilation includes all these formats but falls well short of completeness.

Earlier reviewers also opted for selectivity instead of completeness. Houston and Newman (1982), Lanier and Little (1986), and Wragg (1982) compiled general, though far from complete, reviews of scholarly work in teacher education. Relatively little overlap occurs among the publications cited in these reviews. Some of this individuality may have resulted from the usual problems of document availability, and some may

have resulted from having cited similar but not identical articles. Redundancy is as prevalent in the literature of teacher education as in any other field. Most of the uniqueness must, however, have stemmed from the distinctive perspective from which each reviewer began the task. In a field as pervasive, contentious, and value-laden as teacher education, some initial viewpoint is both inevitable and necessary. The perspective adopted in this review is entirely that of the compiler, and any deficiencies in it or in the compilation itself should be attributed to him, rather than to the New Brunswick School Research Consortium.

The issue of selectivity versus completeness can also be examined as a cost-benefit problem. The benefits of a complete review on teacher education would probably not approach the cost of such an undertaking. The depth of this literature does not match its extent. In assessing teacher education research in Canada, Holborn and Wideen (1983) concluded that:

> What appears to occur is that individuals (faculty and students) pursue curiosities here and there with little or no reference to work conducted elsewhere in Canada. In short, research into teacher education has no tradition in which a community of scholars share a common interest. (p. 32)

This failure to build a coherent literature was judged only the first of several levels of problems with research in teacher education. Holborn and Wideen also criticized the restricted methodologies followed in this research and the researchers' general failure to ask the right questions. The focus, they suggested, should be on research into three areas: "the academic, social and political context of teacher education, and the purpose and goals for the training of teachers, and the effectiveness of program elements" (p. 36).

There are other aspects of teacher education that merit attention, but this is a useful division of the subject. The consequences of teacher education probably hold the ultimate interest. To consider how well a program is functioning is a meaningless exercise without some previous consideration of the purpose of that program. Furthermore, program goals do not arise in isolation. They often make sense only in relation to a particular environment. Hence, this review will begin with an examination of what is known about the context in which teacher education occurs.

First, however, two qualifications that pertain to this compilation need explication. The authors of the publications

reviewed here reached their respective conclusions by means of many different sorts of arguments, some more soundly formulated than others. While limitations affecting these arguments are noted in some instances, this compilation aims to be a summary of the literature, rather than a methodological critique. Whether further generalization of any of the conclusions is warranted is an open question. The second constraint refers to the inexorable numerical dominance of publications from the United States. When the provenance of a report is not stated, it should be assumed to be the United States.

THE CONTEXT OF TEACHER EDUCATION

1. Academic Milieu

Teacher education is now almost exclusively associated with universities, but the relation between the task and context is an uneasy one. The basic element of this incongruity has been well known at least since Conant (1963) described the situation he observed. Arts and science faculty generally denigrate both the process of teacher education and those responsible for it. As many subsequent observers have noted, this pervasive attitude has tangible consequences. A faculty of education typically receives a disproportionately small share of the resources available within a university.

Schwebel (1985) analyzed the institutional origins behind these observations. He attributed the arts and science perspective that teacher education is alien to the culture of the university to three factors: the separate historical development of the university and teacher education programs, the difficulty of being a productive scholar while fulfilling

the responsibilities expected of an education faculty member, and the low social status associated with the public schools and those who make their careers in them.

In making his first point, Schwebel observed that when teacher education became an explicit university responsibility, universities already had 700 years of development in the arts and science fields. Those who came into this environment to teach teachers were, in Schwebel's terms, "distinctly different in background, training, and intellectual orientation from their counterparts in the rest of the university" (p. 3). Rather than following academic tradition and placing their loyalty with their discipline, teacher educators further alienated themselves from their arts and science colleagues by remaining loyal to the public school system, the teachers' professional associations, and the teacher certification authorities.

After acknowledging that the production of knowledge has become the primary function of the university, Schwebel turned his attention to how well teacher education faculty members have done in producing knowledge. He found the results debatable. His less than sanguine conclusion was that an

improvement in the perception or the reality regarding educational research probably would not lift the status of faculties of education substantially.

Schwebel conjectured that teacher education's low status in the university resulted from the fact that, unlike the traditional and highly-esteemed pure and applied disciplines, teacher education offered very little to the nation's industrial, commercial and political leaders. Leadership, he asserted, "reproduces itself without much reliance on the public school system" (p. 6). The converse, teacher education's emphasis on the needs and problems of children at the lower end of the social scale, he saw as reinforcement of the discipline's low academic status. The critical theorists, cited by Ginsburg (1988), promulgated a more extreme view. They argued that both teacher education and schools reproduce all the inequalities of society.

Ducharme (1985), in covering some of the same ground as Schwebel, placed greater emphasis on "the fiscal nightmare of teacher education" (p. 8). Warren (1985) suggested that dissatisfaction with teacher education did not begin with its amalgamation into the universities. Instead, he asserted that

during the past two hundred years, "teacher education has seemed to be in perpetual disfavour" (p. 11). However, he added three points that supplement the institutional analysis of teacher education's status. First, he rejected comparisons with other professional faculties as almost meaningless because "market conditions have driven both the policies and the curricula in teacher education, as both have responded to shortages and surpluses of teachers" (p. 10). Next, he suggested that the negative attitudes have not been exclusively associated with the arts and science faculty. When teacher education was conducted in normal schools as single purpose institutions, the normal school faculty complained about students who attended with the intention only of getting a general education. Finally, he stated his belief that teacher educators have interpreted their own role narrowly and have not tried to educate teachers to "conceptualize, innovate and analyze" (p. 11).

Sykes (1983) described the conflict between teacher education's latent and manifest roles within the university. He noted that while funding formulas usually increase the revenue available to public universities as enrolment increases, the internal distribution of funds rewards "every

professional school and department but teacher education" (p. 90). He saw teacher education's latent role as the subsidization of other programs and teacher education's search for higher academic status, which required the closing of the normal schools and the transfer of their function to the universities, as having reached an ironic conclusion. This latent role may be related to the proliferation of teacher education programs with small enrolments and inadequate curricula noted by Barrow (1987) in his survey of elementary science teacher education in New England.

Tucker (1986) made two additional observations regarding teacher education's status within the university. He criticized faculty in other academic departments for avoiding the public schools as an object of research and for failing to devote any resources to a systematic improvement of their own teaching.

Shulman (1986) presented a contrasting view of the evolution of the university. He suggested that the medieval universities were in fact devoted to the training of teachers. What they lacked was not the role or responsibility. They simply did not acknowledge the sharp distinction between

content and teaching method that has pervaded the recent history of teacher education.

Clifford and Guthrie (1988) compiled the most extensive analysis of the conflict between teacher education and the university establishment. Focusing on ten of the most prestigious graduate programs in education in the United States, they produced an historical and sociological study of the development and dismantling of these programs. The common theme in the analysis is the elimination from these program of any role in the actual education of teachers. In almost every instance the pervasive milieu overwhelmed the fine intentions expressed by those who established these programs.

Clifford and Guthrie used the decline of the University of Chicago's graduate program in reading to illustrate how dramatic the change could be when the academic ethos finally established its precedence over the task of teacher education. During the decades when William Gray administered this program, the University of Chicago was "at or near the pinnacle of the nation's programs for the preparation of researchers, teacher educators, textbook writers and curriculum specialists in the field of reading" (p. 251). The

strong ties to the profession as well as to research about reading were broken within a decade of his death. His closest colleagues retired or relocated. The final and most symbolic element in this devolution occurred when the William S. Gray Chair was awarded to "a cognitive psychologist with no standing in the reading field" (p. 253).

The transfer of teacher education from normal schools to the universities happened more recently in Canada than in the United States, but the timing does not seem to have affected the consequences. Wideen and Hopkins (1983) asserted, "Many Faculties of Education compete poorly within the educational community both for respect and resources and in some cases retain most aspects of the normal school" (p. 3).

Starting from much the same factual base as in the United States, the literature about teacher education's place in Canadian universities has been more clearly oriented toward change. Hopkins (1982) analyzed the reasons that the transition from a normal school setting had not produced substantive changes in Canadian teacher education. He categorized an extensive list of real and perceived barriers to change as systematic, organizational or individual.

Hopkins, Wideen and Fullan (1984) addressed the issue of how to overcome this resistance to change. They surveyed the education faculty in 10 Canadian universities using an instrument that measured organizational functioning. Three methods were used to communicate the findings to the participants. The objective was to use information about the perceived functioning of the organizations to change their actual functioning. The subsequent evaluation of this organizational development intervention showed that climate preparation, feedback and follow-through were all necessary for the intervention to succeed.

Wideen and Holborn (1986) acknowledged that changes had occurred in Canadian faculties of education and attempted to account for this fact. They identified six factors as necessary conditions for such change. They suggested that the external environment must provide some pressure for change, and those in a position within the institution to exercise power in favor of the change must also do so. Shelter conditions, which provide some protection from hostile criticism, and the organizational ability to accommodate change were designated as further prerequisites for change.

Finding suitable leaders and receptive followers were listed as the final requirements.

2. The Political Environment

While other university-based professional programs function primarily in an academic environment that is supportive more often than not, the exertions of teacher educators are subject to both the negative aspects of academic politics and the exigencies of the wider political sphere. The size of the teaching profession; its place in the public domain; the direct acquaintance everyone has with the school system; and the many perceptions that exist regarding the nature, causes and consequences of problems in the schools, all combine to insure that teacher education is the object of frequent, but not necessarily productive, political scrutiny.

The many reports that have been published, particularly in the United States, concerning schools, teaching and teacher education evince the political strength these issues have. Two reports in particular, Tomorrow's Teachers by the Holmes Group (1986) and A National Prepared by the Carnegie Forum on Education and the Economy (1986), have been the object of sufficient comment, analysis, and criticism to warrant a

literature review of their own. The recommendation that teacher education become a graduate program and that the undergraduate degree in education be abolished, a prominent element in both reports, engendered a great deal of debate.

The interchange between Gifford (1986) and King (1986) brought out many of the salient issues. Gifford, a participant in both reform groups, rejected the undergraduate education major because it is predicted on insufficient time, attracts students with too little talent, rejects more talented students who subsequently become interested in teaching, relieves arts and science faculties of their responsibilities to future teachers and perpetuates the rift between content and pedagogy. King, as defender of the existing programs, did not counter Gifford's claims. Instead, he argued that the reform proposals will not succeed because they are too negative regarding the existing teacher education programs and the current members of the teaching profession. In addition, he noted that there are more promising approaches toward improving teachers' skills and attitudes, such as lowering certain class sizes; improving the academic milieu of teacher education; enhancing the image of the public schools; and

providing accessible, low cost, high quality inservice education.

Denemark and Nutter (1984) reviewed the range of responsibilities that have been politically imposed on teachers or fallen to the school system by default. They argued that a six year teacher education program would provide the time to prepare individuals to meet these responsibilities.

Roth (1983) reviewed fifteen post-1976 reports and proposals for the reform of teacher education and concluded that "although we are witnessing a new wave of reform in teacher education there have been many waves before with no result" (p. 24). Ryan (1989) commented even more sceptically on the reform reports and the political context from which they arose. Murray (1986) combined his analysis of the proposals for reformulating teacher education with a design for a reconstructed teaching profession analogous to the medical profession.

Shor (1986) placed the teacher education reform movement in an economic context. In an extensive review of several

reports, he criticized the various proposals as examples of blaming the victim. He attributed deficiencies in the school system to inadequate funding, rather than to inadequately prepared teachers.

Cornbleth (1986) discussed the ritual aspects of teacher education reform movements. As part of her analysis she noted five unresolved contradictions in the reform proposals. In her view, the proposals failed to define the purpose of teacher education, yet presumed a consensus regarding that purpose. They then aimed for the contradictory goals of quality and expansion, diversity and centralization, scientific excellence and technical standardization, and social craftsmanship and technical management.

Tyler (1985) urged current reformers to examine two earlier reform efforts, Charters and Waples (1929) and Bigelow (1946). He noted several similarities between current concerns and the concerns that led to these reports, and he expressed the belief that teacher education still has not learned the lessons regarding the integration of theory and practice illustrated in these reports.

The Canadian literature on teacher education reform has been written in a much more subdued tone than that emanating from the United States, but there is a certain similarity in the conclusions. The five year teacher education program, consisting of an undergraduate degree in arts or science followed by a one year Bachelor of Education program, while far from universal, has a long tradition in Canada. A Legacy for Learners, the report of the British Columbia Royal Commission on Education (1988) recommended that all prospective teachers in that province follow a five year university program. The Final Report of the Teacher Education Review Sharing Committee, produced by the Ontario Ministry of Education (1988), recommended that teacher education in that province be lengthened by one year. Building on the report by Fullan and Connelly (1987), the Committee proposed to follow the one year Bachelor of Education program with a second one year phase of guided introduction to teaching. This would occur at the place of employment, but there would be ties back to the faculties of education. McConaghy (1989) summarized the Ontario situation.

Alberta's Initiation to Teaching Project was funded for two years and attempted to facilitate the transition from

teacher education student to professional teacher for up to 900 prospective teachers each year. Ratsoy, Friesen, and Holdaway (1987) evaluated this program, which was developed for both economic and pedagogical reasons. The economic reason was to employ surplus teacher education graduates. On pedagogical grounds the internship programs aimed to enhance the prospective teachers' skills and professional relationships and to provide grounds for assessing their suitability for the teaching profession. The evaluators concluded that the program was well conducted, well received, and generally attained its pedagogical objectives. They recommended this pilot project be succeeded by a permanent internship program. They found slightly more support for an optional program modelled on the pilot project than for either of two proposals for mandatory programs, one based in the universities and the other based in the school system.

Nova Scotia has both one of the last, if not the last, separate, non-degree-granting teachers college on this continent and seven degree-granting institutions with rather small teacher education programs. That province's Royal Commission on Post-Secondary Education (1985) was highly critical of this dispersion of effort, the lack of

coordination among the institutions, and the spurious claims for specialization made on behalf of some of these programs. The report included calculations of teacher education graduates per full-time-equivalent education faculty member and found that for 1983/84 this figure ranged from 1.2 to 10.2 for the various institutions.

While reports proposing changes in teacher education and their concomitant political pressures ebb and flow, teacher certification exerts a constant, if less dramatic, external political pressure on teacher education programs. Not only do certification authorities have the power to dictate to the universities concerning the nature of the curriculum for teacher education, but they also reserve the right in the case of a shortage of teachers to provide emergency certification to as many individuals as are needed to staff the existing classroom. Gifford (1984) was particularly critical of the conservative influence the certification systems exert on teacher education curricula. Imig (1985) summarized the methods by which certification is granted. He noted both a proliferation of specialized certificates and some movement toward comprehensive certificates. He also reported that initial certification is in some jurisdictions contingent upon

one or more years of successful teaching with a reduced load. Other jurisdictions have eliminated or modified the lifelong duration of teaching certificates. The reintroduction of examinations as a component of the certification process was the final trend he observed.

Shulman (1986) detailed some of the history of examinations for teacher certification and criticized the current certification tests for emphasizing teaching procedures to the absolute exclusion of subject matter. He proposed a professional examination to measure "deep knowledge of the content and structure of the subject matter, the subject and topic-specific pedagogical knowledge associated with the subject matter, and the curricular knowledge of the subject" (p. 10).

3. Teacher Education Faculty

The professional literature provides some insights into the academic and political challenges that teacher education faces. It is not nearly as illuminating with regard to those who must try to meet these challenges. Relatively little is known about teacher educators. Wragg (1982) did not even include the topic in his general review of teacher education.

Carter (1981, 1984) did an intensive analysis of 28 faculty members in the Curriculum and Instruction Department at a university in Texas. A composite picture of the members of this group emerged from an examination of the modes of the various distributions. Aspects of this picture include being just under 40 years old, having come from a blue collar family, having attended public schools, and having taught in the public schools for several years before moving into teacher education. Two factors emerged as the motivation for the career change from school teacher to professor. The desire to continue teaching was identified as one factor, and the other was the desire to work in an environment less prone to bureaucratic excess and isolation than the public schools.

In assessing the degree to which this group of faculty members acknowledged common responsibilities, Carter found general agreement concerning their duty for transmitting the skills of teaching to their students. She found less general but still strong agreement for accepting responsibility for the codification of knowledge about teaching. Acting as a gatekeeper to the teaching profession was accepted by some of the teacher educators but rejected by just as many. Service on university committees was viewed negatively. Participation in

inservice programs for teachers was seen as neither very productive in its usual form nor very well regarded within the university as a whole.

Lanier and Little (1986) extended Carter's findings through synthesis with related work. They concluded:

> It is very likely that [teacher educators] obtain conformist orientations and utilitarian views of knowledge from their childhood experiences at home, educational opportunities in school, and restrictive conditions of work as teachers before coming to higher education. Thus the teacher educators closest to schools and prospective and practising teachers often assume professional work assignments and routines that demand minimal intellectual flexibility and breadth and require, instead, conformity and limited analysis. (p. 535)

Troyer (1986) reviewed these studies and 23 others concerned with characterizing teacher educators. Ciscell and Glass (1986) did a less extensive review of the same topic. Neither review extended the basic picture of those who teach in faculties of education.

Shea and Henry (1986) took the academic backgrounds of professors of educational foundations as the focus for their survey. The 242 respondents from across the United States had extremely varied specializations, representing 38

undergraduate majors, 37 departments at the masters level and 27 departments for the doctorates. These researchers were left wondering just what is foundational about courses in the foundations of education.

Shermis and Washburn (1986) found a similar diversity of educational backgrounds among the 25 professors of social studies education they surveyed. While a majority of the respondents endorsed the importance of social science concepts and methodology for their students, few had actually taken social science courses in their own undergraduate programs. Just less than half of those surveyed indicated quantitative courses were among the least desirable aspects of their own graduate education. Shermis and Washburn combined their demographic and attitudinal data to draw a picture of social studies educators as rather conventional figures out of touch with both the social sciences and the objects of these disciplines. Their findings, they claimed, could explain "why, despite 75 years of research into social problems and book after book on critical thought, there is so little of either in the social studies" (p. 339).

Zabel, Smith and White (1984) placed the emphasis on job satisfaction in their survey of special education faculty. They found job satisfaction varied with age, marital status, sex, academic rank, tenure, income, years as a professor and years in the present position. The factors associated with longer experience indicated more positive job satisfaction.

If little is known about who teaches education students, even less is known about the administration of teacher education. Anderson and King (1987) randomly selected 100 education deans and elicited responses from all of them. While virtually all had earned doctorates, two areas of specialization dominated. Educational administration and curriculum and instruction were about equally represented. Most of the deans rose to the position through teaching in public schools followed by teaching in their present faculty of education. Length of service as a dean varied inversely with the size of the institution.

4. Teacher Education Students

While education faculty members have been somewhat reluctant to study their colleagues, they have shown no such reluctance with regard to their students. Research about

students in teacher education programs constitutes a large part of the teacher education literature. Lanier and Little (1986) noted, however, that this area of research is also problematic.

> Although there has been a good deal of data gathering and thought, there seems to be an excess of the former and a dearth of the latter. As a consequence, misrepresentation and overgeneralization of research findings has occurred in response to growing public interest. (p. 535)

One area in which Lanier and Little were particularly critical of other researchers relates to judgements about the academic qualifications of teacher education students. Many studies have focused on the mean scores registered on the Scholastic Aptitude Test by those proposing to enter a teacher education program. The common observation was that prospective education students scored lower than those planning to pursue other degree programs. Lanier and Little categorized as erroneous the inference from this fact to the commonly drawn conclusion that teacher education fails to attract any high ability students. Instead, they argued, teacher education does as well as can be expected in the intense competition for the best students. What drew the means down, they claimed, was not an absence of high scorers but an excessive number of low scorers.

One way to avoid the limitations inherent in using national averages and relying on statements of intentions is to actually compare education students with others at a particular university. Book, Freeman, and Brousseau (1985) reported the results of just such a study done at Michigan State University. They found that the education students were "very similar to their non-teaching counterparts in overall levels of academic preparation and academic potential" (p. 28). The differences they found were attitudinal rather than cognitive. Non-education students were less concerned about helping others and more concerned about financial gain than were education students.

Byers (1984), also working with students at Michigan State University, examined commitment to teaching and found, in contrast to an earlier national study, that the level of commitment to teaching did not decline as Scholastic Aptitude Test scores increased. He concluded that if an education program has a positive image, it can attract more capable and optimistic students. Andrew (1983) reached a similar conclusion in his study of students in the five year teacher education program at the University of New Hampshire.

Book and Freeman (1986), in another study of Michigan State University education students, found differences between students enrolled in the elementary education program and those registered in the secondary program. The secondary students were significantly more likely to have completed three years of mathematics and science in high school while the elementary students were more likely to have had prior experience in teaching situations with children. The subjects they planned to teach was the focus for the secondary students while elementary students were child-centered rather than subject-centered. Male secondary students had far less commitment to teaching than did either female secondary students or elementary students of either sex.

Zimpher (1988) did a national survey of students in teacher education programs and examined the students' motivation for choosing the particular university they were attending. Since the responses indicated that most education students were at universities within 100 miles of their homes and that these students were not influenced in their choices by either the reputations of the schools or the opinions of their peers, she concluded that the operative factor in their choice was contiguity. The university was there and attending it was convenient. These students' plans for the future were

similarly limited culturally and geographically. They expected to teach middle class children near their home town and had little interest in either urban or special education.

In a local, longitudinal study that included only female students, Savage (1983) found that teacher education fared poorly relative to other disciplines in attracting good academic students. However, as the students in this cohort changed programs in their progress through their four years, the mean Scholastic Aptitude Test scores for the teacher education students increased. Savage concluded that education was attracting better students to transfer from other programs. Furthermore, when he examined the distribution of scores across disciplines he determined that "the top 60 to 75% of women in EDCI could be successful in nearly any other field of study" (p. 18). He also computed a measure of high school class standing and found that "women in EDCI compared quite favorably with those in other areas at the junior and senior levels" (p. 19). He explained the different perspectives produced by SAT scores and high school class standing by observing:

> In most education courses neither strong verbal or math skills as measured by the SAT are rewarded. What often is rewarded is task persistence and workmanship, qualities that

> might better be measured by high school class standing. (p. 19)

Savage (1984) also provided a critique of his own and other studies of this sort. After noting the deficiencies in the various measures, he criticized the assumption that there are no future teachers in the pool of students enrolled in programs other than education.

Some researchers have tried to assess the cognitive development of teacher education students in Piagetian terms. Silverman and Creswell (1982) found that 53% of the sample of elementary and secondary students they assessed were operating at the concrete level while the remainder had attained formal operational thinking. They examined whether logical reasoning ability, attitude toward mathematics or grade point average distinguished these levels of thinking. They found that the formal thinkers enjoyed mathematics more and feared it less than those at the concrete level. They also found that formal thinkers scored higher on some measures of logical reasoning. Grade point average did not distinguish the two groups.

Reyes (1987) used Piagetian tasks to compare teacher education students with students in other disciplines. While

he also found large percentages of students operating at the concrete level, there was no statistical difference between teacher education students and the general university population.

Nelli and Atwood (1986) used Maslow's conative hierarchy to compare teacher education students and public school teachers. However, since the instrument they used measured only the first three of Maslow's six levels, the interpretation of the results was problematic. Physiological and safety needs did not distinguish the two groups, but the students scored significantly higher than the teachers at the love and belongingness level of the scale.

Yeazell and Johnson (1988) used Kohlberg's theory of levels of moral judgment to compare teacher education students and faculty. Three groups of students, freshmen, seniors, and graduate students, were assessed. The scores on a measure of moral reasoning indicated no differences among the student groups. The faculty scored significantly higher. When the student groups were compared to the test's norms, 34% of the undergraduates and 24% of the graduates recorded scores below those expected of senior high school students.

Several studies have examined education students' attitudes independently of any theory of cognitive or affective development. Marshall (1986) in a study of undergraduate education students at the University of Manitoba concluded that intrinsic benefits, such as working with children, were the prime motives for choosing teacher education. However, when these students were asked to assess their fellow students, less intrinsic motives were attributed to their teacher education classmates.

Curtis (1985a, 1985b) assessed education students at the University of British Columbia in terms of their attitudes towards the disabled and mainstreaming. The students were grouped by program. While special education students were found to be somewhat more accepting of the disabled than other groups of teacher education students, all the students exhibited only marginally favorable attitudes. Level of commitment to mainstreaming was similar among all groups, with favorable attitudes only toward the integration of mildly disabled students.

Frager (1987) touched on another aspect of the attitudes of teacher education students: their apparent lack of desire

to read about their chosen profession. He described an intervention aimed at encouraging a group of these students to read during their summer vacation from a list of widely publicized trade books about schools and teaching.

5. The Demand for Graduates of Teacher Education Programs

Goodlad (1984) clearly expressed the dilemma that market conditions cause for teacher education:

> Educators' interest in teacher education wanes when there is an abundance of teachers....It is unfortunate that interest in teacher education increases most often in times of shortage because attention of those who employ teachers is almost always focused on increasing the supply at the expense of quality." (pp. 312-313)

During most of the 1970's and the first part of the 1980's, only a limited demand was evident for the abundance of teacher education graduates. Quality and quantity issues tended to be confounded under these circumstances. Schlecty and Vance (1983) tried to separate quantity from quality in their study of how declining markets affected universities differentiated by institutional reputations and graduates' scores on National Teacher Examinations. They found that the more competitive institutions that maintained the quality of

their graduates experienced the greatest decline in market share followed by the least competitive universities. The middle range of universities that held or increased their market share seemed to have done so by admitting less able students.

Several studies seem to indicate a coming shortage of teachers in North America. Gerald, Horn and Hussar (1988) in a careful and cautious study of the demand for teachers in the U.S. through 1997 projected a steady rise in the total number of teachers. New hirings, resulting from turnover, enrolment changes and other factors, were projected to rise steadily from 1990 to 1995 followed by stabilization and then a slight decrease in the final year of the forecast. The market for secondary teachers was assessed as stronger than that for elementary teachers, particularly in the latter part of the forecast period. The Occupational Outlook Handbook (1986) reported similar conclusions. Weaver (1983), while concentrating on the academic performance of teacher education students, provided an historical analysis of teacher surpluses and shortages in the United States during the past century.

The Canadian Teachers Federation study, Projections of Elementary and Secondary Enrolment and the Teaching Force in Canada 1987-88 to 2006-07 (1989), based its projections on fertility and migration data. The projection period was broken into four five-year intervals. For elementary teachers the demand was projected to rise and then stabilize in the first two intervals, then to fall. The projection for secondary teachers involved an increase in demand for the first two intervals followed by stabilization and a final interval of decline.

Smith (1989) examined Ontario data regarding both eligibility for retirement among current teachers and enrolment in teacher education programs. She found that the province has an imminent teacher shortage with the entire pool of new graduates necessary to replace retirees within a few years. The generation of graduates from the years of teacher surplus will not, in her view, be available for these positions. She also noted that Ontario school boards have begun "to recruit across Canada and beyond for the first time in many years" (p. 43).

The British Columbia Royal Commission on Education (1988) assumed a constant pupil teacher ratio and a constant attrition rate among teachers. The Commission also assumed a current surplus of 8000 qualified teachers in that province. The surplus and the current graduates were seen as providing an adequate supply of teachers until 1991. Then, even if enrolments in teacher education programs are raised to the levels of the late 1970's, there will still be a provincial shortage of 500 teachers per year.

THE GOALS OF TEACHER EDUCATION

1. Overview

The dominant assumption of teacher education, indeed of every professional program, is that completion of the program indicates both some professional development and the capacity for further development. Graduates should emerge from the program better able than when they entered to meet the responsibilities of the teaching profession. Exceptions exist, but they are rare. Damerell (1985) described a graduate program in education which apparently aimed for social change in the larger society, rather than for any professional development in the individuals who completed the program.

One major problem with defining goals for teacher education is the lack of agreement about the professional responsibilities of teachers. There may be a better consensus regarding such matters in other professions, but the recent literature on teacher education fails to manifest any

unanimity. The norms that normal schools were supposed to inculcate no longer exist.

Brousseau and Freeman (1988) demonstrated the existence of substantial disagreement within a single faculty of education concerning what constitutes a desirable set of beliefs for teacher education graduates. The researchers presented each faculty member with a set of 53 belief statements about teaching and asked how graduates of the program should respond to each. For each question the number of faculty members indicating a negative response would be appropriate was subtracted from the number favoring a positive response. The resultant indicator was calculated by comparing the absolute value of the differences to the total number of responses. The level of disagreement was shown by the fact that over half of the statements elicited an indicator of less than 50%.

Fullan, Wideen and Eastabrook (1983) examined the degree to which the actual goals in Canadian teacher education programs fall short of what the students and faculty felt would be the case in an ideal program. The respondents indicated the degree to which each of nine statements

expressed actual and ideal goals of their program. On average both groups rated all of the statements higher as ideals. The patterns indicating the discrepancy between the ideal and real situations were similar for both students and faculty.

There is no lack of ways to differentiate the goals of teacher education. Short (1987) reviewed the literature proposing unifying themes for teacher education. He found 28 different concepts that have been suggested as the basis around which a teacher education curriculum might be built. Emans (1981) identified four approaches to teacher education: preparation, imitation, clinical and reflective. Goodman (1986) surveyed the perceived outcomes of a methods course for elementary education students. He distinguished three roles the course served, to be relevant, liberalizing and critical. A simpler division of goals is used in this compilation. The literature has been divided into two groups. One emphasizes goals of the discrete and demonstrable sort. The other focuses on broader qualities of mind.

2. Discrete Goals

Houston and Newman (1982) reviewed the rise and decline of competency-based teacher education programs. The proponents

of these programs advocated explicit, discrete, and demonstrable objectives for teacher education. The content of these goals was derived from the observed or conceptualized role of the public school teacher, but the specific competencies that teacher education students were to demonstrate varied considerably from one program to another.

Ginsburg (1988) did an ethnographic and historical study of the development of the competency-based teacher education program at the University of Houston. He explained how this radical departure was initiated in the 1960's by the combination of large increases in funding and enrolments and a dean ambitious to achieve a national reputation for the school through innovation in the preparation of teachers. Ginsburg analysed the implementation of the modular program in terms of the deskilling and proletarianization of the professorate. The subsequent intervention of the Texas State Board of Education, which promulgated a policy requiring that teacher education programs in that state be competency-based, focused resistance from those faculty with contrary views. Faculty in the foundation fields were prominent in their opposition. Ginsburg, with little sympathy for individuality or academic freedom, expressed his conclusion that both the

innovators and the resistors were elite groups oriented toward the preservation of inequality.

The narrow and extremely atomistic goals established in competency-based teacher education found few advocates and many critics in the teacher education literature during the 1980's. One of the severest of these critics, Broudy (1984), analysed how teaching competence was identified, achieved and tested in such programs. Evertson, Hawley and Zlotnik (1985), in a more favorable assessment, predicted a reincarnation in various guises of competency-based teacher education as the result of the political pressure associated with teacher-evaluation. Medley (1984) clarified issues in teacher competency testing and related them to teacher education's gatekeeping function.

The word "competency" did appear frequently in the literature regarding teacher education for the integration of special needs students. Usually specific competencies required for this task were identified. Center and Obringer (1986) found this approach too limiting and surveyed teacher educators, special education teachers and state directors of special education about their assessment of the relative

importance of 25 survey topics related to special education teacher preparation. They found a high degree of agreement concerning which topics are important for an undergraduate course. Less agreement was evident in the ranking for the graduate level.

Sets of goals, broader than those promulgated for competency-based teacher education but still focused on observable teacher skills, appeared frequently in the teacher education literature of the 1980's. Medley (1988) delineated desirable competencies resulting from perceptual skills, professional values, professional judgment and performance skills. He explained these in the context of goals for teacher education programs and elements for the assessment of teacher education students.

Stallings (1987) reviewed the research on teacher effectiveness and recommended, in concert with many previous proposals, such as Brophy (1984), that this research be used to establish goals for teacher education programs. She specified competencies related to planning, classroom management, instructional strategies and evaluation as being appropriate to incorporate in teacher education programs.

Brophy (1988) suggested goals for teacher education related to classroom management, student socialization and disciplinary intervention. He described the knowledge base concerning classroom management and indicated that conceptual change teaching is required to counteract the prevalent misconceptions teacher education students have about this topic. Acknowledging that there is neither coherent knowledge about student socialization or disciplinary interventions nor agreement about the teacher's role in these areas, he still proposed that an integrated approach to classroom management, involving the other two topics, be a goal for teacher education.

Berliner (1985) expressed the similar view that a body of knowledge and a set of concepts now exists to analyse classroom phenomena. The implication he drew was that teacher education ought to be laboratory based. His ultimate goal, an analytic rather than a practical orientation for teachers, would, he concluded, be realizable in a laboratory based program in a way it could never be in a reformed teacher education program based only on increased subject specialization and longer student teaching.

The teacher competency and teacher effectiveness approaches to teacher education are similar in focusing on goals related to classroom methodology. But these approaches do not exhaust the range of specific goals proposed for teacher education. Ben-Peretz (1984) argued that curriculum theory and practice in curriculum development should have a central role in teacher education programs. Buchmann (1984) defended placing the priority on knowledge of the subjects to be taught. Howey and Strom (1987) synthesized research on conceptual, moral and ego development to define goals for both teacher education and teacher selection.

Greater integration of content and method was the goal expressed in several papers. Cooney (1988) considered the education of mathematics teachers and concluded that the dichotomy between subject and methods courses is counterproductive. Instead, he proposed the adoption of a combined goal under which prospective mathematics teachers would have experience constructing the same mathematics they would eventually teach. Galbraith (1982) focused on mathematical misunderstandings among teacher education students and secondary students. He found similar results with the two groups and inferred that the knowledge the teacher

education students require to become effective mathematics teachers could not be obtained from the standard content or methodology courses.

When Tamir (1988) formulated goals for an entire curriculum in teacher education, he emphasized the integration of content and methodology through the development of content specific pedagogical knowledge. Gudmundsdottir and Shulman (1987) reported an attempt to derive integrated goals for teacher education through observation of the difference in approach of two social studies teachers, a novice teacher and a teacher with extensive experience. The goals related to the knowledge of social studies specific pedagogy that the novice teacher would have to acquire to function at the level of the experienced teacher. Shulman (1987) built on research of this type to propose a comprehensive plan for teacher education.

3. Reflection as a Goal

In the 1980's those inclined to view the goals of teacher education in holistic fashion often encapsulated their views in the word "reflection" and its derivatives. A reflective teacher was seen as one who has the qualities of mind desirable for members of the teaching profession. The Ontario

Ministry of Education (1988) expressed the desire for "teachers who are reflective, critical and inquiring" (p. 50). The emphasis among those who wrote about reflection was on the sorts of abilities that would be evident through the course of a career in teaching, rather than on skills that would be detectable through a small number of discrete observations.

While all who wrote about reflective teachers paid homage to John Dewey, this common ancestry, perhaps not surprisingly, failed to produce any uniformity of purpose or method. Three incompatible interpretations of reflective teaching appeared in the literature. They ranged from one that could be considered in harmony with any number of discrete goals for teacher education to one that was strictly opposed to the sorts of reasoning expressed in defense of distinct goals.

Cruickshank (1985, 1987) was the most analytic of the three. He recommended reflective teaching both as a goal for teacher education and as a method for reaching that goal. The goal, reflective teaching, he defined (1987) as a process which involves "meditation, musing, contemplation, pondering, deliberation, cognitive reasoning, and speculation" (p. 3) about teaching. The method, also called reflective teaching,

required small groups of teacher education students to simulate and reflect on classroom learning experiences. Each student in turn had to plan and teach a lesson to other members of the group, test learner achievement and satisfaction, and engage the group in reflecting about the process. Cruickshank structured the goals for the lesson to minimize the effects of previous learning. Any method could be used to teach the lesson. Cruickshank exemplified his approach with a description of the origami lesson, the goal of which is to have each student construct a paper butterfly.

Zeichner (1981) based his version of reflective teaching on Dewey's concept of reflective action. Dewey (1933) identified openmindedness, responsibility and wholeheartedness as the three components of reflective action. Zeichner developed this concept into a political framework. His object of reflection was not limited to the teaching-learning process in the public schools as they are, but included, indeed emphasized, the process of schooling as it might be. He proposed:

> An approach that not only recognizes student teachers' needs to cope in the present but also takes them beyond an uncritical acceptance of the present and empowers them to scrutinize collectively the ideological

and intuitionistic approach to professional practice on a constructivist view of reality.

> Through countless acts of attention and inattention, naming, sensemaking, boundary setting, and control, [professionals] make and maintain the worlds matched to their professional knowledge and know-how. They are in transaction with their practice worlds, framing the problems that arise in practice situations and shaping the situations to fit the frames, framing their roles and constructing practice situations to make the role-frames operational. (1987, p. 36)

Schön's examples of professional practice, such as design, counselling, and musical performance, fit well with this view that the professional constructs his own world. Kennedy (1987) reviewed the literature on professional education and related it more specifically to teacher education. She set Schön's view of expertise as deliberate action into a broader perspective, relating it to the less complex views of expertise as technical skill, as the application of theory, or as critical analysis.

Clark (1988) reviewed the research on teacher thinking. Studies of how teachers reflect and plan were included along with studies of teacher's perceptions and studies of how teachers deal with uncertainty and think through dilemmas.

Gore (1987), Calderhead (1989), and Richert (1987/1988) each summarized and commented critically on the extensive literature about reflective teaching. Zimpher (1986) reviewed Schön (1983). Goodman (1984) described practice teaching seminars to encourage reflective teaching. Hillkirk and Dupuis (1988) described a journal-based approach to encourage reflection during practice teaching. Richert (1987/1988) also reported the results of her research which was designed to facilitate reflective teaching. Using a small group of student teachers, she studied the effects of two factors, a colleague with whom reflection about teaching was possible and a portfolio that could be constructed as an individual's reflective device. The student teachers were differentiated according to whether they had none, one or two of these facilitating factors. She found a development in the resultant level of reflection. Those with neither facilitating factor produced personal reflections. The construction of a portfolio shifted the reflection to the content of instruction. The presence of a partner produced reflection about social aspects of teaching. Those who had both facilitators reflected on content-specific pedagogy.

THE RESULTS OF TEACHER EDUCATION

Evertson, Hawley and Zlotnik (1984, 1985) reviewed the research studies that related teacher education to teaching or learning in the public schools. Two types of global studies were found. One, in which teachers' classroom performance was analysed for evidence of what was learned in a teacher education program, showed only short-run efficacy. They found little evidence of any long term transfer of learning from teacher education programs to the school classroom. The other research paradigm compared provisionally certified and regularly certified teachers. Eleven of the thirteen studies of this type concluded that regularly certified teachers were more effective.

In a later study of this second type, Dewalt (1986/1987) reported equivocal results. Using trained observers, he rated all new secondary teachers in Virginia in 1985/86 on twelve competencies derived from teacher effectiveness research. The graduates of teacher education programs scored significantly

better on two of the twelve measures. Eight competencies showed no significant difference while two favored the teachers who lacked teacher education. Dewalt did find a significant difference in the variability of the scores for the two groups. Greater variation in scores was recorded for individuals without teacher education.

Evertson, Hawley and Zlotnik (1985) also examined the research related to programs proposed or implemented to improve teacher education. They found screening, either for admission or certification, to be relatively devoid of supporting evidence. Of all the screening measures proposed, they found only the teacher's verbal ability correlated with subsequent student performance. Schalock (1988) also found disappointing results in his review of possible predictors of success in teaching.

Evertson, Hawley and Zlotnik (1985) found little research on the consequences of increasing certain components of teacher education. Subject knowledge of science teachers was found to be positively related to student learning, but similar evidence was lacking for other subjects. They found no studies of the effects of liberal arts courses as part of

teacher education, nor did they find any teacher education programs that tried to incorporate a significant part of what they assessed as the current knowledge base for pedagogy.

In examining earlier efforts in teacher education reform, Evertson, Hawley and Zlotnik (1985) concluded that the research on competency-based teacher education and microteaching indicated both could be pedagogically effective. However, the available research, they suggested, indicated that the proponents of student teaching have overrated its value.

Ashton, Crocker and Olejnik (1986) also reviewed the literature relating teacher education to student performance. Most of their conclusions were similar to those of Evertson, Hawley and Zlotnik, but there were a few differences. Ashton, Crocker and Olejnik found some general evidence that the number of university courses a teacher had taken in a subject correlated positively with their students' achievement. They also found a tendency for teachers with higher grade point averages to have higher student achievement in their classes.

Emmer (1985) in his review of the research on learning to teach concluded that "the clinical components of learning to teach are intense interpersonal experiences, rather than focused on the acquisition of specific skills or models of teaching" (p. 24). Feiman-Nemser and Buchmann (1987) used two case studies to assess how student teaching has functioned in teacher education. They concluded

> For student teaching to be teacher education, it must go beyond survival or extend [sic] practice in the outward forms of teaching to sort out appropriate from inappropriate lessons of experience. ... The current structure of student teaching makes these goals difficult, at best, to achieve. (p. 272)

Zeichner and Grant (1981) in studying ideas about pupil control held by student teachers found that "the student teaching experience is a low impact enterprise that plays little part in altering students' earlier ideas about teaching" (p. 307).

Borko, Lalik and Tomchin (1987) examined student teachers' assessments of their own development. They found among the student teachers a uniform and stable conception regarding what constituted successful teaching. This concept seemed to predate their pedagogical preparation. The

researchers found that weaker student teachers were aware of the discrepancy between this concept and their performance.

Nelli (1984) responded to criticisms about the quality of prospective teachers' subject knowledge. Using data for graduates of a single university, she compared the grade point average in content courses of secondary teacher education graduates with the averages for graduates who majored in the same subjects through the arts or science faculties. She found no significant differences between the mean scores of the two groups. Cohen (1984) completed a similar comparison with a larger set of data and found a slight advantage in favor of the teacher education graduates. Barger and Barger (1984) focused on academic achievement at university in comparison with assessed potential prior to entering university. They found that the teacher education graduates had entered university with lower scores on tests of academic aptitude than graduates in other programs, but the teacher education graduates had as good or better actual academic achievement as graduates from other programs.

Oberlin (1980) compared a conventional and a minimum standards approach to increasing the science content knowledge

of elementary education students. At the time of graduation she retested both groups and found no difference in achievement. Scharmann (1988) also examined elementary education graduates' understanding of science. He focused on the outcomes of integrated and separate content and methods courses and found that separate courses were more efficacious in developing scientific understanding.

Skipper and Quantz (1987) compared the attitude changes toward educational practices that occurred in a teacher education program and in arts and science programs at the same university. While the arts and science students expressed more progressive attitudes toward the process of education than the teacher education students did when they were both assessed as freshmen, the reverse held at the time of graduation. Both groups increased their scores of progressiveness, but the teacher education students changed more.

Newton and Brathwaite (1987), working at the University of the West Indies, surveyed secondary teachers enrolled in a one-year inservice program during which they obtained their initial formal teacher training. The teachers' assessment of the relative importance of various skills was compared with

their evaluation of the program's effectiveness in generating these skills. The researchers found that in general the program was perceived to be more effective for the more important skills.

Lampert (1988) synthesized what is known about educating mathematics teachers in the light of the mathematics achievement that is wanted in the schools. She gave a tentative but positive response to the possibility that teachers can learn a view of teaching mathematics that goes beyond facts and procedures. She indicated, however, that producing the appropriate circumstances for this learning to occur on a large scale in teacher education programs is still problematic.

Leyser and Bursuck (1986) surveyed teacher education graduates who had taken a course on mainstreaming during their program. As teachers they reported the survey course was their most useful source of mainstreaming information, though they assessed some components of the course as much more useful than others.

EPILOGUE

This review of the literature of teacher education can report no dramatic developments. The 1980's did, however, produce many significant, if small scale, reports that laid the foundation for further research efforts. Some important questions were clarified, and some observations of consequence were noted. The opportunity exists to build on this foundation. While some writers, such as Tom (1980), expressed the view that such efforts are futile, several, including Katz and Raths (1985) and Zimpher and Ashburn (1985), developed carefully thought out and clearly expressed research agendas for teacher education. Smith (1985) provided examples of research findings applicable to teacher education.

There were many reports about teacher education from the 1980's that this review failed to mention. Some must count as oversights, but others were simply rejected. Among the rejected were far too many of the process-product variety that, in the typical instance, found only that teacher

education students exposed to a learning situation actually learned something. Further efforts of this type seem to hold little promise.

A more promising development in the advancement of knowledge about teacher education is the major research project described by Goodlad (1988). Having clarified their own assumptions and derived a set of postulates about teacher education, Goodlad and his colleagues examined teacher education programs in eight states. The findings of this study remain to be published. Whatever they may be, at least this study does not appear to suffer, in terms that Lanier (1984) applied to teacher education in general, "from the illusion that great things can be obtained with minor investments of time and resources" (p. 24).

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